

Name \_\_\_\_\_ Date \_\_\_\_\_ Bell \_\_\_\_\_

## **Unit 1: Lesson 3- Scientific Investigations**

### **Vocabulary**

1. Experiment (page 28)-

---

---

---

2. Observation (page 28)-

---

---

---

3. Hypothesis (page 28)-

---

---

---

4. Variable (page 29)-

---

---

---

5. Independent variable (page 29)-

---

---

---

6. Dependent variable (page 29)-

---

---

---

7. data (page 29)-

---

---

---

8. control (page 34)-

---

---

---

## What are some parts that make up scientific investigations Page 28-29

1. What are some parts that make up scientific investigations?

---

---

---

2. What is an experiment?

---

---

3. What are observations?

---

---

---

4. What is a hypothesis?

---

5. What are variables?

---

---

---

6. What is the difference between an independent variable and a dependent variable?

---

---

---

7. You want to test the hypothesis that the intensity of heat under a pot of water determines how fast the water boils.

What is the independent variable? \_\_\_\_\_

What is the dependent variable? \_\_\_\_\_

What are the constants? \_\_\_\_\_

8. How many variables should you change in an experiment? Why?

---

---

---

9. What is data?

---

---

---

## What are some scientific methods? Pages 30-31

10. Do scientists always follow the same steps or methods?

---

11. What are the seven steps to the scientific method described in your book?

---

---

---

---

---

---

---

12. What does it mean to define a problem?

---

---

13. What does it mean to form a hypothesis?

---

---

14. What does it mean to plan an investigation?

---

---

15. What does it mean when a scientist has to identify variables?

---

---

16. What does it mean when a scientist has to collect data?

---

---

17. What does it mean when a scientist has interpret and analyze their data?

---

---

18. What does it mean when a scientist has to draw conclusions?

---

---

19. What if the data from an experiment did not support the hypothesis?

---

## **How are scientific methods used? Pages 32-33**

20. Suppose that you want to investigate something using the scientific methods. First, define a problem. Then, plan an investigation using the methods discussed in the previous page.

21. Give another example of a scientific investigation that would require both observation and experiments.

## What are the key components of a controlled investigation? Page 34

22. What does control mean?

---

---

---

23. What do scientists do with the control group versus the experimental group?

---

---

---

24. How many variables do you change in a controlled experiment?

---

25. Do you change the dependent variable?

---

## Why should investigations be carried out more than once? Page 35

26. Why should investigations be carried out more than once?

---

---

---

27. What is the difference between repetition and replication?

---

---

---

## What are some characteristics of good scientific investigations? Page 36

28. What are the qualities of a good scientific investigation?

---

---

---

---

---

---

---

---

---

---

29. Why is peer review important?

---

---

30. You read a report about a new drug on the internet. How do you know if the information is reliable?

---

---